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The family *Chaetomiaceae* from China 4. Two newly recorded species of *Chaetomium*

Yunzhong Guo, Mingqi Zhu & Guangyu Sun*

State Key Laboratory of Crop Stress Biology in Arid Areas and College of Plant Protection, Northwest A&F University, Yangling, Shaanxi 712100, P. R. China

*Correspondence to: *sgy@nwsuaf.edu.cn*

Abstract — Two species of the genus *Chaetomium, C. virescens* and *C. senegalense,* are reported as newly recorded species in China. The characteristics of the two species are described and illustrated from our materials. These specimens and living cultures examined were deposited in Herbarium of Fungi in Northwest A&F University (HMUABO).

Key words — saprophyte, ascomycetes, taxonomy

Introduction

Chaetomium (*Chaetomiaceae, Sordariales*) was introduced by Kunze based on the type species *Chaetomium globosum* and characterized by superficial, ostiolate ascomata, with hairs or setae and one-celled, brown or gray-olivaceous ascospores. It is a species-rich genus, with about 95 currently accepted species (von Arx et al. 1986, 1988; Kirk et al. 2008). In China, 33 species have been recorded (Chen 1973, Tai 1979, Eriksson & Yue 1988, Sun et al. 2004, 2005; Wang et al. 2005a,b). In a survey of *Chaetomiaceae* species from different regions in China, numerous isolates were obtained from soil and plant debris, and two new records, *Chaetomium virescens* and *C. senegalense* were found. These species are described and illustrated.

Materials & methods

The isolates were from plant debris, which are dry branches of *Pinus tabuliformis* in Nyingchi, Tibet Autonomous Region, dead twigs of *Caragana microphylla* in Chifeng, Inner Mongolian Autonomous Region and dry tissues from a kind of graminaceous weed in Zhangye, Gansu Province. These were cultivated on Martin Agar (MA: 5 g peptone, 10 g dextrose, 1 g KH_2PO_4, 0.5 g $MgSO_4$ $7H_2O$, 15 g agar, 1000 ml distilled water). Subcultures were grown on corn meal agar (CMA: 30 g cornmeal, 15 g agar,

1000 ml distilled water). Colony characteristics, including colony diameter after 3 to 5 days of incubation on CMA at 28°C and 37°C in the darkness, were measured and photographed. The plant samples and living cultures are deposited in Herbarium of Fungi in the Northwest A&F University (HMUABO).

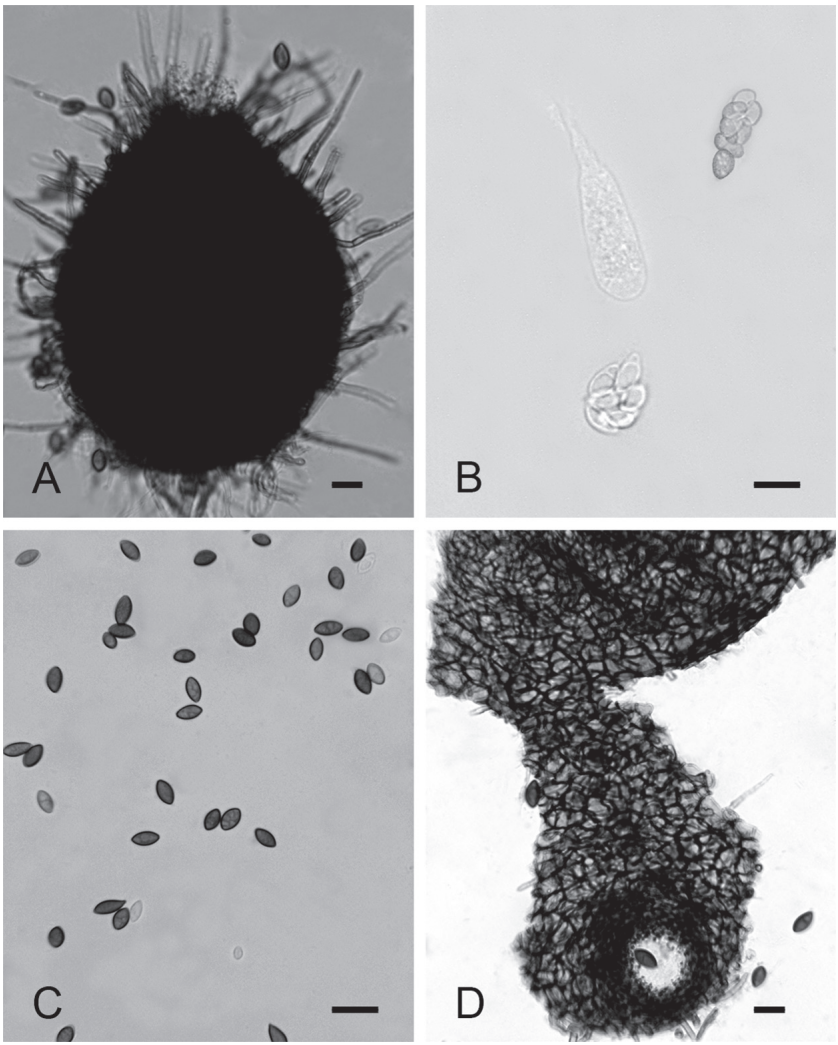

Fig. 1 *Chaetomium virescens*: A. ascoma; B. asci; C. ascospores; D. textura.
Scale bars: B, C = 2 μm; A, D = 10 μm

Taxonomy

Chaetomium virescens (Arx) Udagawa, Trans. Mycol. Soc. Japan 21: 34, 1980. Fig. 1

Specimens examined—**CHINA. Tibet automous region: Nyingchi** (29°35'N 94°15'E), in dry branches of *Pinus tabuliformis* Carrière, H.M. Yue, HMUABO 61252. **Inner Mongolian automous region: Chifeng** (42°15'N 118°53'E), in dead twigs of *Caragana microphylla* Lam., Y.L. Liu, HMUABO 61235.

Colonies with a daily growth rate of 4–8 mm on CMA at 28°C in the dark, with abundant aerial mycelia and orange color or yellow green exudates; ascomata maturing within 16 days, superficial, black in reflected light, ellipsoid, 195–215 × 130–145 μm, ostiolate, with a conical beak, wall dark brown, cells of textura angularis; ascomatal hairs sparse, straight, tapering seta-like, 220 μm long, 2.5 μm thick at the base; asci fasciculate, clavate, stalked, 8-spored, evanescent, 27.5–32.5 × 11.25–13.75 μm; ascospores fusiform or ellipsoidal, often inaequilateral, brown when mature, 6.25–7.5 × 9.4–12.5 μm, with a distinct apical germ pore, occasionally with a germ pore at both ends.

Comments: The strains had a broad range of growth temperature (15–45°C), and ascoma formed abundantly at 28–37°C. Ascomata maturing within 6 days at 37°C in the darkness. Colonies were pale at beginning, then a light yellow. These features differed from *C. virescens*, since the exudates were also orange, and the asci were shorter, and maximum length was only 32.5 μm.

Chaetomium senegalense L.M. Ames, Monogr, *Chaetomiaceae*: 36, 1963. Fig. 2

Specimen examined—**CHINA. Gansu province: Zhangye** (38°54'N 100°27'E), in dry tissues of a graminaceous weed, Y.Z. Guo, HMUABO 62070.

Colonies with a daily growth rate of 7–8 mm on CMA at 28°C in the darkness, with a white or pale aerial mycelium and pale yellow exudates; ascomata maturing within 18 days at 28°C, superficial, grayer in reflected light, ellipsoidal-spherical, 210–250 × 225–290 μm, ostiolate, peridium with a brown wall and cells of textura angularis; ascomatal hairs mainly growing in the upper part of ascomata, 650–850 μm long, undulate, septate, branched or unbranched, tapering, 2.5 μm thick at the base; asci fasciculate, cylindrical, with short stalks, 8-spored, evanescent, 37.5–50 × 6.25–8.75 μm; ascospores ovate or nearly spherical, brown or dark brown when mature, 8.75–11.25 × 6.25–7.5 μm, with nearly apical germ pores.

Comments: Growth of these strains exhibited a broad temperature range (15–45°C) and ascoma formed abundantly at 28–37°C. But compared with those seen by Ames (1963), these asci were 20 μm shorter at maximum length.

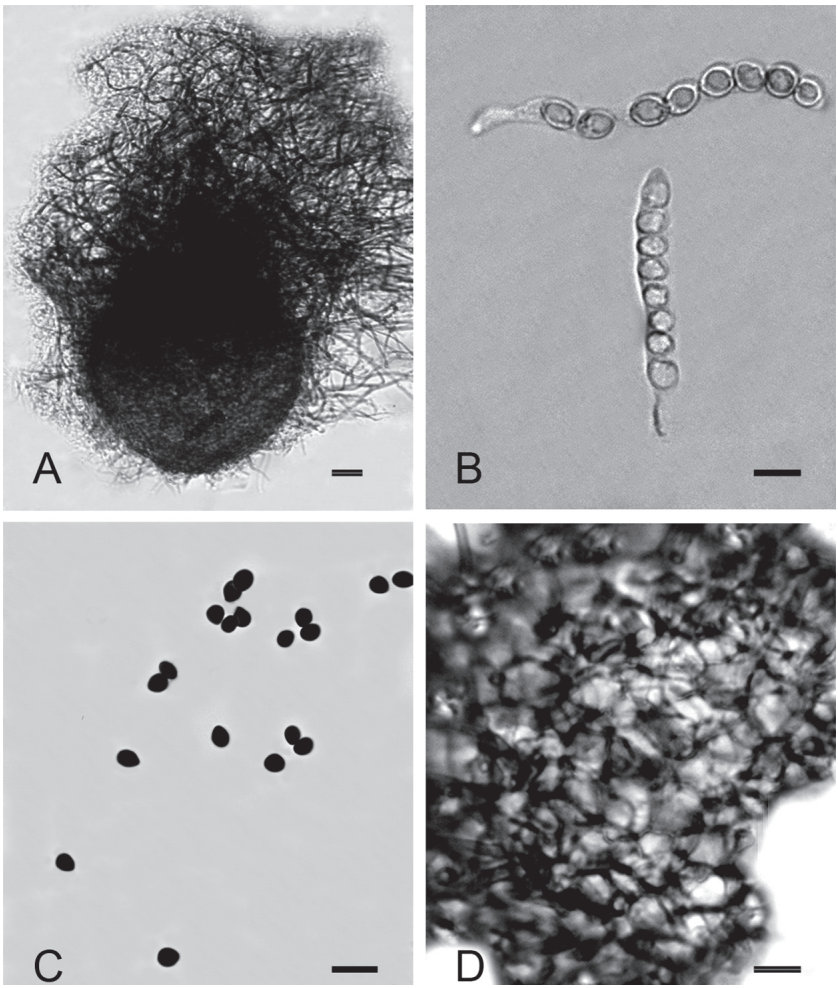

Fig. 2 *Chaetomium senegalense*: A. ascoma; B. asci; C. ascospores; D. textura.
Scale bars: A = 10 μm; B–D = 2 μm

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